

REMARKS

Claims 1, 2, 4-16, 18-27, 29-41 and 43-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson, *et al.* (U.S. Publication Number 2002/0176009). Claims 3, 17, 28 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson, *et al.* in view of Lee, *et al.* (U.S. Patent Number 6,388,500). In view of the amendments to the claims and the following remarks, the rejections are respectfully traversed, and reconsideration of the rejections is requested.

In the present invention as claimed in claims 1-14 and 15-25, an image processing system includes a correlated double sampler (CDS) for receiving an input signal, sampling the input signal and providing an output signal. The CDS includes an amplifier for amplifying the input signal and a variable capacitance unit having first and second variable input capacitances. The first variable input capacitance is connected to a first input of the amplifier and a second variable input capacitance is connected to a second input of the amplifier.

Claims 1-14 and 15-25 are amended to clarify that the first variable input capacitance is connected to the first input of the amplifier and the second variable input capacitance is connected to a second input of the amplifier. It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

In the present invention as claimed in claims 26-39 and 40-50, a method of processing an image includes providing a CDS for receiving an input signal, sampling the input signal and providing an output signal, and amplifying the input signal. The CDS includes a variable capacitance unit having first and second variable input capacitances for setting gain in the CDS. The first variable input capacitance is connected to a first input of an amplifier and the second variable input capacitance is connected to a second input of the amplifier.

Claims 26-39 and 40-50 are amended to clarify that the first variable input capacitance is connected to a first input of an amplifier and the second variable input capacitance is connected to a second input of the amplifier. It is believed that these amendments to the claims clarify the distinctions between the claimed invention and the cited references.

Johnson, *et al.* discloses a CDSVGA circuit 114 having first and second stages. The first stage 131 includes a first capacitor C1 133, which is fixed, a first amplifier 134 connected to first capacitor 133, and a variable capacitor 135 in parallel with the first amplifier. The second stage includes a variable capacitance C3, 143 connected to the output of first amplifier 134 and the input of a second amplifier 144. A second fixed capacitor C4, 145 is in parallel with the second amplifier 144.

Johnson, *et al.* fails to teach or suggest an image processing system that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 1-14 and 15-25. Instead, in Johnson, *et al.*, neither of the amplifiers 134 and 144 includes first and second inputs. Therefore, neither of the amplifiers 134, 144 are connected to first and second variable input capacitances at first and second inputs of the amplifiers 134 and 144.

In addition, Johnson, *et al.* fails to teach or suggest a method of processing an image that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances for setting gain in the CDS, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 26-39 and 40-50. Instead, in Johnson, *et al.*, the first stage includes only a single variable capacitor 135. Instead, in Johnson, *et al.*, neither of the amplifiers 134 and 144 includes first and second inputs. Therefore, neither of the amplifiers 134, 144 are connected to first and second variable input capacitances at first and second inputs of the amplifiers 134 and 144.

Johnson, *et al.* fails to teach or suggest elements of the invention set forth in claims 1-14, 15-25, 26-39, and 40-50. Specifically, Johnson, *et al.* fails to teach or suggest an image processing system that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 1-14 and 15-25, and a method of processing an image that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances for setting

gain in the CDS, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 26-39 and 40-50. Therefore, it is believed that the claims are allowable over the cited reference, and reconsideration of the rejections of claims 1, 2, 4-16, 18-27, 29-41 and 43-50 under 35 U.S.C. 102(b) as being anticipated by Johnson, *et al.*, is respectfully requested.

Lee, *et al.* discloses a correlated double sampler 82 which includes two sample and hold units 90 and 92.

Lee, *et al.* fails to teach or suggest an image processing system that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 1-14 and 15-25.

In addition, Lee, *et al.* fails to teach or suggest a method of processing an image that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances for setting gain in the CDS, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 26-39 and 40-50.

Johnson, *et al.*, as discussed above, and Lee, *et al.* fail to teach or suggest elements of the invention set forth in claims 1-14, 15-25, 26-39, and 40-50. Specifically, Lee, *et al.* fails to teach or suggest an image processing system that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 1-14 and 15-25, and a method of processing an image that includes a CDS which includes a variable capacitance unit having first and second variable input capacitances for setting gain in the CDS, the first variable input capacitance being connected to a first input of an amplifier and the second variable input capacitance being connected to a second input of the amplifier, as claimed in claims 26-39 and 40-50. Accordingly, there is no combination of the references which would provide such teaching or suggestion. Neither of the references, taken alone or in

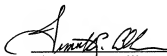
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combination, teaches or suggests the invention set forth in claims 1-14, 15-25, 26-39 and 40-50. Therefore, it is believed that claims 1-14, 15-25, 26-39 and 40-50 are allowable over the cited references, and reconsideration of the rejections of claims 3, 17, 28 and 42 under 35 U.S.C. § 103(a) based on Johnson, *et al.* and Lee, *et al.*, is respectfully requested.

In view of the amendments to the claims and the foregoing remarks, it is believed that, upon entry of this Amendment, all claims pending in the application will be in condition for allowance. Therefore, it is requested that this Amendment be entered and that the case be allowed and passed to issue. If a telephone conference will expedite prosecution of the application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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